Before the

FEDERAL COMMUNICATIONS COMMISSION

February 21, 2006

In the Matter of:	)	
	)	
Amendment of Part 97 of the Commission's	)	RM-11306
	)	
Rules Governing the Amateur Radio Services	)	

Reply to Comments of Robert Stephen Waterman, K4CJX, posted on the ECFS, 02/06/06

By

Stephen Hicks, N5AC

1. BACKGROUND AND INTRODUCTION:

I, Stephen Hicks, have been a licensed radio amateur since 1978 when I was first licensed as a Novice at twelve years of age. I currently hold the Amateur Extra class license. I am a life member of the American Radio Relay League (hereafter referred to as the "ARRL"), where I have served in the past as a Volunteer Examiner and as an Assistant Emergency Coordinator for Collin County, Texas. I currently focus most of my radio energies in the microwave bands through 10 GHz. I am also a member of the Air Force Military Affiliate Radio Service (hereafter referred to as the "MARS"). In the past I have owned and operated various systems to facilitate communications during emergencies including a packet bulletin board system (PBBS) which was a key link in forwarding health and welfare traffic in and out of the affected area during Hurricane Gilbert in 1988.

Professionally, I have served in technical posts in a number of high technology companies including Rockwell International, Texas Instruments (Member, Group Technical Staff), Digital Equipment Corporation (Information Technology Partner), Continuus Software and Vitria Technology until I founded a software company in 2001, The Custom Factory, where I served as the Vice President of Engineering and Chief Technology Officer until recently. I also serve on the steering committee of the Dallas County Medical Reserve Corps under the direction of the Dallas County Health and Human Services Department. I have a bachelor of science in Electrical Engineering from Texas A&M University and a Masters in Business Administration from Southern Methodist University's Cox School of Business Executive MBA Program. I have no financial interest in the outcome of the proposed rule making.

2. DISCUSSION:

I recently volunteered to assist in relief efforts in the wake of hurricanes Katrina and Rita and was subsequently assigned to assist the Salvation Army in Mississippi. I reported to the Salvation Army Headquarters in Jackson, Mississippi a few weeks after landfall of Hurricane Katrina. The Salvation Army Headquarters in Jackson are well equipped with terrestrial common carrier equipment, Internet capability and amateur HF and VHF communications equipment. After arriving, I was grouped with four other amateurs and asked to proceed to Long Beach, MS and report to the on-site Captain in the Salvation Army and offer communication services to the group providing relief effort.

HF communications with the Salvation Army in Jackson were spotty and in the chaos of a disaster relief effort, it was difficult to consistently connect with Jackson on HF voice. Equipped with Winlink 2000 and a modem

capable of Pactor 3 modulation (OFDM capable of up to 3,600 bps digital throughput), I was able to easily communicate with both Jackson and our ARRL leadership in Texas on amateur frequency allocations between 3.5 and 14.35 MHz. Winlink allowed our team to send status information and health and welfare traffic directly to the email inboxes of Salvation Army Staff personnel.

During hurricane Rita efforts, I volunteered again and was sent to Jasper, Texas with the same equipment. The team on site was working with Baptist Men's organizations that were providing meals for hurricane victims. The Baptist Men's group was having trouble getting their requests for food and supplies successfully to Sysco, a food distribution concern. We were asked if we could transmit their orders (a Microsoft Excel spreadsheet) to an email address at Sysco which we did again via Winlink 2000 over HF bands.

As most experienced communicators will vouch, the ability to send requests as data has far reaching implications. Requests by voice tend to be difficult to track, time consuming to deliver and generally less accurate than data transmissions. There will always be a need to handle voice communications because of the relative immediacy of the medium, but data communications are significantly more efficient, both spectrally and in operator management time. Data transmissions can also be sent and forwarded at all times of the day (provided there is allowable automatic operation), can retry in times of temporary communications blackouts, can be tracked during the window when the communications are desired and can be logged and retrieved after an event to study response methods and times to enhance future responses. When I sent messages to the Salvation Army, I generally copied a half-dozen people in ARRL leadership positions so they would be aware of our situation and "in the loop" on our operations. This assisted the ARRL with planning and other support efforts. Without a tool like Winlink 2000, each of these

individuals in leadership positions would have had to monitor a voice net at the time I was delivering the information to understand our status or would need to acquire status information thought other means.

Tools like Winlink 2000 are able to be created and deployed only when commission rules allow the emissions in the given frequency allocations. We are all in a time period where the invention of a specific technology, the deployment and testing of that technology and its useful life can span just a few years before the next technology comes along and takes it's place. Two of the key purposes of Amateur radio are to contribute to the advancement of the radio art[1] and to provide emergency communications as a public service[2]. With the rapid evolution of technology, it seems that removing the bandwidth stipulation afforded in 97.221(c)[3] will allow further experimentation with new modulation techniques that provide faster throughput of accurate data during times of emergency.

With data communications, an increase in allowable bandwidth can actually decrease interference. By doubling the bandwidth of a transmission and hence the effective throughput, a given user transmitting a given amount of data can pass that data to another station in roughly half the time. This allows another station to use the channel sooner, in effect reducing the number of required channels required to pass the data. We are essentially trading frequency division multiplexing with time division multiplexing. In doing so, we do not have to contend with co-channel interference of having multiple closely spaced data channels. It also gives us the ability to send larger amounts of data quickly when required.

[1] FCC §97.1 (b)
[2] FCC §97.1 (a)
[3] FCC §97.221(b), (c).

I have read many of the comments filed in opposition of RM-11306. In general, I have found the concerns to center around interference that may be caused by widespread data robots that transmit on a channel without first establishing the absence of an existing conversation in progress. While I understand that progress is being made in technology that would preclude automatic data stations from transmitting in the presence of existing voice communications, I also note that interference is a very regular part of every amateur's work on the HF bands. For example, a station with a highly directional antenna often transmits on a channel not having heard a station also transmitting on the same frequency that happens to be in a null on his antenna. Similarly, stations are often not able to hear some stations transmitting on the same channel in a skip zone. I have found myself being notified by other amateurs that I was transmitting over a station I could not hear, when the other station could hear both myself and the station I was allegedly interfering with. This is the nature of loosely coordinated transmissions on the amateur bands and something all amateurs live with. In general, interference problems are brief and quickly resolved. Most amateurs work hard and pride themselves on being "good neighbors" on the amateur bands and respecting fellow amateurs.

The more specific concern is that a digital station with no operator present will transmit over existing voice conversations without regard to interference caused is a valid concern. It is one that we as amateurs must work together to solve through a combination of both technical and social means. The presence of this problem should not, however, prevent the advancement of the radio art and the creation of new modes of communication that could further assist us in our goals to prove our worthiness to the public with our public service efforts. By eliminating 97.221(a), the commission will not be signaling to amateurs that they condone interference on the amateur bands from automatic digital stations. Rather, the commission will be signaling

that the advancement of the radio art is a fluid proposition in this era of rapidly changing technology and the commission would like to see amateurs continue to advance communications with new protocols and modulation schemes.

I am sympathetic to individuals that have interference concerns, and it is this sympathy, shared by my fellow amateurs in the digital arena, that will guide us in the best methods for reducing the possibility of this interference. I feel strongly that the promise of evolving technology and what we, as a group, can do with that technology to serve the public outweighs the potential for interference. I believe many amateurs in opposition to the proposal would prefer the commission legislate away any potential inconveniences they might encounter on the bands rather than work with the larger community to solve those problems together as a group.

CONCLUSION

I sincerely appreciate the commission's time reading my comments and I formally endorse RM-11306 and R. Stephen Waterman, K4CJX's, comments and respectfully request the rapid adoption of the same.

Respectfully Submitted,

/s/

Stephen Hicks, N5AC.